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USING TECHNOLOGY TO TAKE THE MASSACHUSETTS LEGISLATURE INTO THE 21ST CENTURY

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EXECUTIVE SUMMARY

In order to provide leadership in the 21st century, the Massachusetts Legislature must improve its use of information technology and telecommunications. Coordination of efforts by the Senate and the House of Representatives, careful planning, and a commitment to improvement and public access are the key ingredients of this project.

This proposal recommends that the current Senate Committee on Telecommunications and Technology and the House Information Technology Task Force merge into a joint committee. The committee would oversee a coordinated effort to upgrade legislative technology, focusing on installation of the following systems over a two-year period:

A. Office automation, to upgrade and standardize all equipment, to be linked through a new legislative network.

B. Computerization of the legislative process, to allow for electronic filing and storage at all stages of the legislative process.

C. Providing public access to legislative information on the Internet, the information superhighway. This would bring all legislative information "on-line."

D. Computerization of the House and Senate Chambers, which would allow legislators to participate electronically in the legislative process, and provide them with access to other sites during sessions.

Funds for this project would be provided by Chapter 194 of the Acts of 1992, the so-called Information Technology Bond bill.

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I. INTRODUCTION

The Massachusetts Legislature could reap great benefits by moving forward in its use of telecommunications and technology. Despite the premier universities and high tech businesses in our state, the Legislature remains far from the cutting edge in its use of technology. According to a survey conducted by the Senate Committee on Telecommunications and Technology, many other state legislatures have made great strides in their use of technology, thereby increasing their efficiency and the public's access to important information.

State-of-the-art technology can be an effective tool for government agencies seeking to stretch their limited dollars and maximize efficiency of employees. Even more importantly, improved use of telecommunications and technology is the next step in the Legislature's efforts to rebuild faith in government. The Legislature has succeeded in creating a more open electoral process with the passage of the strictest campaign finance law in the nation, the Motor Voter law, and the creation of a special commission on ethics. Increasing public access to the legislative process would open the doors of democracy even further, and help to restore public faith in government.

Furthermore, public expectations about electronic access to information have risen along with increased use of telecommunications. More effective use of these tools would insulate the Legislature from criticism that it is behind the

times, and demonstrate its ability to lead.

With funds provided by Chapter 194 of the Acts of 1992, the so-called Information Technology Bond bill, the Legislature has a unique opportunity to upgrade its technology and lay the groundwork for future growth. The bill provided $1 million for the House of Representatives and $1 million for the Senate for computer upgrades and modernization. To date, $400,000 of the Senate funds have been encumbered or spent. The bill also provided $1 million apiece for the Senate Committee on Ways and Means and the House Committee on Ways and Means. Funds generated by this bond bill will likely cover the cost of office automation and loading current legislation information on the Internet, the information superhighway, as outlined in this proposal. An additional $2 million to $4 million may be necessary to computerize the legislative process and the legislative chambers.

This proposal seeks ways to take advantage of recent advances in technology to increase efficiency, provide a more orderly process and increase public access to legislative information. The proposal focuses on current practices and recommendations for the future in four areas: office automation, computerization of the legislative process, public access to legislation on the Internet (the information superhighway), and computerization of the Senate and House chambers.

II. CURRENT USE OF TECHNOLOGY IN THE LEGISLATURE

A. Office Automation

The Senate and the House of Representatives have independent computer systems. Hardware and software vary between the two branches, or even from office to office. There is great variation among offices as to the level of sophistication of technology. Senate computers are not linked within offices or to those in other offices, and all data is stored on disks or individual hard drives. Without a network or central storage feature, computer users must transfer information among offices on paper or on disks, which may have been generated by incompatible software. Some House computers are linked, which allows users to gain access to information that has been stored on other computers. But some Houses offices have only word processing equipment.

The House has embarked on a computer upgrade project using funds from the Information Technology Bond Bill. The House seeks to provide new computers and new software, linked together by a Local Area Network. Under the direction of the House Information System, the House will install upgraded computer terminals (these will be "486" terminals) in the offices of each Representative, Committee, Aide, Staff Director and Research Director. Each terminal will have access to a centralized data storage system. Three vendors are being considered for a new software system based on Windows, which will provide these major components:

1. Electronic mail (through a network, rather than modems) This allows electronic transfer among offices of messages and **entire documents.**

2. An upgraded word processing program, featuring simplified and more efficient features for making corrections and changing the format of documents. For example, the process of sending a mass mailing would be streamlined.

3. An upgraded database program, for storing information on constituents and other topics.

4. A spreadsheet feature, allowing for charts, visual aids and quantitative exercises.

and 5. Scheduling software, which would allow more efficient scheduling. One feature of this program allows electronic coordination of schedules among offices, without revealing the nature of meetings on individual schedules.

The House plans to install the new system starting in November, 1994, continuing through December, 1995.

Legislative computers are not connected to the Wide Area Network (WAN), which links computers in state agencies. The WAN is operated by the state Office of Management Information Systems (OMIS). Certain State House offices receive access to legislative information on the OMIS mainframe by using a series of passwords. This information is similar to that provided to the public by computers in the offices of the Senate and House

Clerks. Although OMIS is expanding and upgrading the WAN, there are no plans to extend it to the Legislature.

B. Computerization Of The Legislative Process

Although some parts of the legislative process are performed electronically, many are not. Under the current system, bills are typed by either House Counsel or Senate Counsel; or by individual legislators. They then begin a process that may include being physically typed or scanned up to two additional times; manipulated by committee (also typed numerous times); changed by amendment; and carted by hand throughout the building.

The Senate Committee on Telecommunications and Technology and the House Task Force on Technology examined the existing system to find out who is responsible for the input and storage of information.

The following table clearly shows much duplication of effort despite the existence of a central storage site in the OMIS computer. Further duplication sometimes occurs with Eagle Graphics, which prints bills, calendars, journals and other documents, after receiving disks and hard copies (which are scanned) from the Legislature.

Legislative Activity	Input	Storage
Bill number assignment	Clerk's Office	OMIS
Bill title	Clerk's Office	OMIS
Committee assignment	Clerk's Office	OMIS
Bill text	Legislative Data Processing (LDP)[1]	OMIS
Bill Sponsors	LDP	OMIS
Bulletin Creation	Bulletin Office	OMIS
Bill History	Clerk/ LDP	OMIS
Notice of Hearings	Clerk/Bulletin Office	OMIS
Bill Summary	Committee staff	staff/ HIS
Daily List	Bulletin	OMIS
Floor Amendments	Clerk/ Legislator	Clerk
Engrossing	Engrossing	OMIS
Daily Calendar	Clerk's Office	Clerk
Daily Journal	Clerk's Office	Clerk
Veto Message	?	?
Chapter Assignment	Secretary of State	OMIS
General Laws, Acts & Resolves	OMIS	OMIS
State Constitution	?	?

Despite this general lack of coordination, however, the Legislature is moving toward more efficient use of technology in the Bulletin Office, which is purchasing new software designed to help streamline its operations.

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[1]The Legislative Data Processing Office, along with the Bulletin Office, serves both the Senate and the House of Representatives.

C. Public Access To Legislative Information On The Internet

The Massachusetts Legislature offers no legislative information to the public through electronic channels. Access to legislative information maintained on the OMIS computer is limited to certain offices within the State House.

In contrast, 33 other states offer public electronic access to information similar to that provided by the Senate and House Clerks and the Documents Room.[2] At least 24 states offer electronic access to bill text, bill status, bill history, and committee hearings schedules.[3]

A new "on-line" system was recently installed in California. Installation was completed within a ninety-day period at a cost of less than $80,000. As a result, a computer user may contact the California Legislature by using normal telephone lines via a modem and a public or private service to gain access to the Internet. There is no additional charge to the user beyond the price of a subscription to the Internet service. (Note: although California's service is free, other legislatures offer this service in a variety of price ranges.) The user can reach the desired information (such as the text or status of a bill) after making a series of choices from menus. These files are "read only" files, so computer users are not able to change text or otherwise manipulate data. The computer user can "download" and

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[2]"Access to Legislative Databases Increasing," Government Technology, June, 1994, page 22.

[3]Id, page 52.

store information onto an individual computer, thus eliminating the need to dial in again for the same information.

D. Computerization Of The Senate And House Chambers

In the Senate and House chambers, access to computerized legislative information is limited to members of the House and Senate Clerks' office staff. In order to communicate with their offices, members must use telephones located in the lobbies. In addition, there is no simple method for a member to check the status of a bill, or to send documents back and forth between the chamber and his or her office.

III. RECOMMENDATIONS

It is recommended that the legislative leadership authorize the Senate Committee on Telecommunications and Technology and the House Information Technology Task Force to merge, in order to jointly oversee implementation of this technology upgrade proposal. By working together, the two groups could pool their knowledge and build on their past research. A joint committee could avoid duplication of effort, and prevent the two branches of the Legislature from moving in opposite directions. Members of this proposed join committee are aware that any plan to upgrade technology is fraught with potential pitfalls and embarrassing mistakes. Thus the committee will consider all decisions extremely carefully. By following the recommendation to implement this proposal in several stages, the committee will have the opportunity to build on its knowledge.

The committee will oversee information technology improvements in the following four areas: office automation, legislative information on the Internet, computerization of the legislative process, and computerization of the Senate and House chambers.

A. Office Automation

1. It is recommended that the Legislature upgrade and standardize its computer systems, and connect the entire system through a Local Area Network. This would particularly benefit offices with older equipment. An upgraded computer system could reduce staff time spent on routine tasks, and enable members and staff to address the needs of constituents and others more quickly. A standardized system could increase efficiency and allow computer users greater flexibility.

The Legislature's network would physically link computers in both branches and in legislators' district offices. Computer users could save time and eliminate duplication through the use of electronic messages and file transfers. Including district offices in the network is crucial, since about one-half of all Senators and many State Representatives maintain district offices. The network would represent a dramatic step toward an electronic Legislature.

2. It is recommended that a legislative network be connected to the state Wide Area Network (WAN), allowing electronic messages and file transfers between the Legislature and state agencies. Legislative computer users could then

communicate electronically with state agencies, allowing E-mail and transfer of documents. This would also allow the Legislature to benefit from the experience and expertise of OMIS, as well as any future expansion and improvements to the WAN.

3. It is recommended that the Legislature plan for technological upgrades and growth in the future. Careful, coordinated planning at the outset will enable the Legislature to benefit from continuing developments in technology.

Proposed Action: Policy

1. It is recommended that the leadership of both branches of the Legislature direct staff to coordinate their efforts to purchase upgraded computers, so that Senate and House computers are compatible and linked together through a network.

2. It is recommended that the leadership of both branches direct staff to link the legislative computer network to the state WAN.

3. It is recommended that the leadership of both branches institute a plan for regular review, maintenance and improvement of technology systems in the Legislature.

Proposed Action: Administrative

1. a) It is recommended that Senate staff confer with House staff as soon as possibly to coordinate the purchase and installation of an upgraded, centralized computer system. House personnel have taken many steps in their decision-making process, and are scheduled to begin installation of a new system in November, 1994. Therefore, efforts to coordinate the computers

of both branches must begin immediately.

After conferring with the House, it is recommended that the Senate begin the process of purchasing and installing upgraded equipment. Efforts to coordinate training efforts and construction of the legislative network would be greatly aided if the Senate installed its equipment on the same timetable as the House.

It is recommended that the Senate and House computer systems are identical. This would ensure that these systems are compatible for linkage through a network, and maximize the Legislature's buying power. In addition to the items being considered by the House for inclusion in its software package (electronic mail, word processing, database, spreadsheet and scheduling), it is recommended that the Legislature install scanners. A scanner transfers paper documents onto a computer, thus reducing typing time. Although all staff should have access to a scanner, the Legislature need not install one in every office,

In addition, it is recommended that the Legislature purchase modems and a service to gain access to the Internet, the information superhighway. These tools would greatly improve legislators' ability to communicate electronically and conduct research. Legislators could communicate via electronic mail to anyone with an e-mail address, and gain access to computers outside the legislative network or the state WAN. For example, a legislator preparing a bill or a speech could gain access to

legal or legislative information from other states, libraries around the world, or electronic bulletin boards. With modems linked to the new legislative network, one machine would be available to many users.

b) The installation of a legislative network would necessitate installation of wiring or cable. Alternatively, a wireless network, similar to that in the Indiana Legislature, could be installed. This network would link all legislative offices, including those in both branches, joint offices (such as the Legislative Data Processing Office and the Bulletin Office), and district offices. Access to the network can then be custom designed. For example, staff members would use a series of passwords to gain access to various areas of the network. Some users could have greater access to the network than others. Staffers could be limited in their access to documents from other offices, so that they could read these documents without the ability to make any changes in them.

c) It is recommended that both branches institute a comprehensive training effort for all computer users, including an initial survey to determine users' present skills, a hands-on training session (with users divided into groups according to their skills), a post-class survey to determine users' new skill levels, and continuing support after the training period. This training model is based on House plans for installation of its new computer system.

2. In order to facilitate linkage of the two networks, the legislative network must be compatible with the WAN. Varying levels of clearance, providing different levels of access to the WAN, could then be assigned to individual computer users at the State House.

3. It is recommended that leadership and staff representing both branches of the Legislature establish a plan for regular review of telecommunications and technology systems. Designees should oversee installation, repair and maintenance of the new office systems, and consider future upgrades and modifications. It is recommended that policymakers and technical staff members consult regularly with OMIS to keep abreast of technological developments in other state agencies.

B. Computerization of the Legislative Process

1. It is recommended that the Legislature adopt an electronic system for filing bills and moving them through the entire legislative process. Bills could be typed once, filed electronically and even transferred to committees through the use of the computer. Amendments could be filed electronically, with the receiving computer shutting down at a designated deadline. This system would include a link between the Senate and House chambers, which could prevent tampering with bills and expedite sessions during busy legislative days.

Ultimately, further computerization of the legislative process would allow the Legislature to meet the standards of

total quality management (TQM), weeding out inefficiency in order to maximize the productivity of each State House employee. Electronic transfer of bills and other documents would diminish duplication of effort, and eliminate the time consuming steps involved in transferring paper documents.

Proper security measures are very important in such a system. Access to documents could be limited by a system of security passwords. In order to prevent tampering, the files of the Senate and House Clerk could be established as "read only" files.

2. It is recommended that all legislative information be stored on the OMIS system, and made available to all members of the House of Representatives and the Senate. Despite current duplicative processes described in the table on page 7, much legislative information is already stored in this central location. OMIS would be the central repository of all documents as they travel through the legislative process electronically. These efforts could be further coordinated (again, electronically) with Eagle Graphics, which prints bill, journals and other documents.

Certain joint offices, such as the Legislative Data Processing Office and the Bulletin Office, already contribute to the coordination of the legislative effort, and would continue to play a key role in the input and coordination of the process. coordinated process.

This system would have two tiers: one for legislative users

with private documents, and one for public users. Thus individual legislators would have private computer files, and bill drafts under consideration by the Committee in Third Reading, or the Ways and Means Committee, could be limited to the committees currently working on them. Similarly, amendments within committees or on the floor need not be available to anyone but lawmakers who must vote on them. Access to these documents would be limited through the use of security passwords. Public access to these same documents could be provided later when a document became a public record.

Proposed Action: Policy

1. It is recommended that the legislative leadership direct staff to establish a two-tiered system as described above for electronic filing and transfer of bills, which would utilize the central OMIS computer for input and retrieval of all legislative information. Leadership should approve the system prior to implementation.

2. It is recommended that legislative leadership negotiate an agreement with OMIS which allows for expanded use of OMIS computer as a centralized storage system.

Proposed Action: Administrative

1. It is recommended that the legislative staff establish new procedures and guidelines for electronic filing and transfer of bills. The new system should coordinate the efforts of offices in both branches and maximize efficiency of all employees. Staff should include plans for training all

legislators and staff on the new procedures. The plan should be presented to legislative leadership for approval.

2. It is recommended that legislative staff confer with OMIS personnel while establishing the OMIS computer as the central storage facility for ALL legislative information.[4] Legislative staff should ensure that the current format of the OMIS computer is appropriate for the increased volume of information, and that the expanded system is user-friendly for a wide range of computer users. The legislative staff should also address compatibility issues between legislative equipment and the OMIS mainframe.

C. Public Access To Legislative Information On The Internet

1. It is recommended that the Legislature make legislative information available to the public electronically through the Internet. As the most widely accessible part of the information superhighway, the Internet offers the best hope of reaching the widest possible audience. All legislative information that is currently maintained at the OMIS computer[5] should be brought "on-line" (posted on the Internet), including bill numbers, bill title, bill text, Bulletins, bill history, hearing notices, Daily Lists, and statutes. This information would be available to anyone with a modem and access to the Internet through a public

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[4] The goal is to store all the information listed on the chart on page 7 on the OMIS computer.

[5] See the chart on page 7 for a complete list of legislative information currently stored on the OMIS computer.

or private service. It is recommended that this information be offered to the public in a format that is accessible to ALL Internet users. This information would be available in a "read only" format, to prevent tampering.

2. As the legislative information stored on the OMIS computer is expanded, this additional information must become available to the public "on-line." As the Legislature follows the recommendations of this proposal, the OMIS computer will become the central storage facility for all legislative information. Additional information will thus be stored on this computer, including Daily Calendars and Daily Journals.[6] With the exception of information stored on the OMIS computer for internal use, such as a legislator's files, or committee drafts and amendments, all legislative information should become available on the Internet as it is added to the OMIS computer.

Proposed Action: Policy

1. a) It is recommended that Senate and House leadership negotiate an agreement on the use of a pathway to the Internet, with a vendor such as "Nearnet," which serves educational, non-profit computer users.

b) It is recommended that legislative leadership negotiate an agreement with OMIS on expanded use of the OMIS computer as a central storage facility for all legislative information.

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[6] See the chart on page 7 for a complete list of legislative information, all of which will be stored on the OMIS computer.

c) It is recommended that legislative leadership instruct staff to establish a plan to place all legislative information currently stored on the OMIS computer on the Internet.

Proposed Action: Administrative

1. a) It is recommended that staff research the requirements for using the selected pathway to the Internet.

b) It is recommended that staff reorganize all data stored on the OMIS computer into a user-friendly "Gopher" (menu) format to help the public find the information they need.

c) It is recommended that staff immediately begin "uploading" data that is currently maintained in the OMIS computer to the Internet.

2. As more legislative information is stored on the OMIS computer, it is recommended that staff "upload" this additional information onto the Internet. However, internal files of legislators or committees should not be uploaded.

3. It is recommended that all of these steps be performed in such a manner as to allow for future expansion of on-line materials.

D. Computerization Of The House And Senate Chambers

1. It is recommended that each member of the Legislature be issued a laptop computer to be connected to the legislative network from the House or Senate Chamber, a State House office, district office, or any location where a modem is available.

These computers could be physically connected to the legislative network while in use in certain offices (in the State House or district office). When in use from remote locations, the computers would connect to the network through use of a modem. The laptop computers would finish transforming the legislative process into an electronic process, by granting electronic capabilities to legislators in their respective chambers. They would provide members with myriad remote information processing capabilities, including:

a) Electronic filing of motions and amendments;

b) Electronic access to bills, bill history, and amendments;

c) The ability to send and receive speeches, amendments, press releases and other documents to and from each legislator's office, district office, or any locations where a modem is available;

d) The ability to send and receive electronic mail to and from other House and Senate offices during formal sessions;

e) The ability to access large volumes of information electronically stored in the House or Senate Chambers, or in State House or district offices.

f) The ability to communicate on-line with staff at any time without leaving the chambers.

2. It is recommended that these laptop workstations be linked to a high-speed laser printer in the Legislative chamber. This would allow legislators to print documents without leaving

the chamber.

Proposed Action: Policy

1. It is recommended that legislative leadership direct staff to include laptop computers for members in their purchase and installation of a new computer system.

2. It is recommended that legislative leadership adopt guidelines for electronic submission of motions and amendments during sessions.

Proposed Action: Administrative

It is recommended that the laptop computers and network equipment be purchased along with other equipment. These computers may be wired into the legislative network as the final step of the installation of the network.

IV. TIMETABLE

November 1, 1994:

* House begins installing new computer system.
* Senate begins process of selecting and purchasing new computer system.
* House and Senate begin coordinated process of planning and evaluating technological needs of Legislature.
* Begin process of bringing current legislative information stored on OMIS computer "on-line" to Internet.

February 1, 1995:

* Process of bringing OMIS legislative information "on-line" is complete.
* Senate finalizes purchase and begins installation of computer system.

January 1, 1996:

* OMIS expansion begins.
* Expanded information brought "on-line" to the Internet.
* Senate and House chambers connected to the Legislative network.

December 31, 1996

* Legislative telecommunications and technology project complete.

APPENDIX: SURVEY OF STATE LEGISLATURES BY SENATE COMMITTEE ON TELECOMMUNICATIONS AND TECHNOLOGY

State legislatures are organized in many different ways, each responding to its own political climate and public expectations. The Massachusetts Committee on Science and Telecommunications, in its efforts to design a modern office, capable of reaching into the twenty-first century, surveyed Senate branches in each of the fifty states. Completed surveys were received from the following twenty-four states and Puerto Rico:

Alabama	Nebraska
Alaska	New Hampshire
Delaware	New Mexico
Florida	New York
Idaho	Nevada
Kansas	North Dakota
Maryland	Oklahoma
Michigan	Oregon
Minnesota	Puerto Rico
Mississippi	Rhode Island
Missouri	South Dakota
Montana	Texas
	West Virginia

(Connecticut and Wyoming responded with letters)

What was clearly evident is that Massachusetts is not the only state struggling with the desire to modernize in the hopes of gaining greater efficiency; sixty percent (60%) of the responding states have, or are, conducting their own research.

"The times have changed dramatically. In the law offices, schools, real estate firms and insurance offices where they work, legislators use computers. They no longer accept a situation in which the other major environment of their professional lives - the state legislature - will not provide them with automated support. More legislators come to their official duties expecting to have an information system environment equal to or better than that in their homes and work places."1

While Montana found that automation expectations may have been high, the actual technology available to the legislators was limited.

1 A study on the use of computers by legislators, October, 1992; Montana Legislative Council

Low	Middle	High
ID,MS,MT,ND	AK,AL,DE,MD,MI,NH,NM,NV	CT,FL,KS,MI,MN
RI,WV,WY	MA,OK,OR,SD,PR	NE,NY,TX

The states were separated into three categories: low-technology, middle-technology and high-technology. Those states included in the low technology group are, for the most part, part-time legislatures, or ones with limited staffs. For instance, the state of Wyoming has a 19-person, full-time, centralized staff which provides bill drafting and analysis needs. A small desk on the capitol floor and two filing drawers located in the committee room are all of the amenities provided to the legislator. Likewise, most of the other states listed in this category reported having no computers in the Senators' offices.

The members of the high technology category boast networking within the building, with other government agencies, and even selected libraries. Most systems are designed and implemented by a joint public office or council incorporating both the House and Senate. Most of the computers (offices boast 4+ in each office) are linked through local area networks. Twenty-five percent (25%) of the states in this group reported having fax machines, modems and internet systems in their offices. All have electronic access to bills, bill status, senate calendars, bill indexes and committee schedules, directly from their Senate offices. Eighty percent (80%) also have such access to budget information and bill histories. Sixty percent (60%) can receive information on senate journals and committee agendas. Only forty percent (40%) have direct computer access to voting records. Through the use of local networks, state-wide networks and mainframes, these forward thinkers receive electronic information from other Senate offices as well as state agencies. Texas, Kansas, New York, Minnesota and Michigan also have electronic access to state libraries.

Like many other legislatures these fast-trackers have a strong concern for security which is handled through the use of passwords as well as encryption.

Of those five high-tech states who have district offices, four claim that the state is responsible for the expenses. In addition, all of these states have access to the same tools and services in the district offices as in the capitol office. Most Senators "dial-in" using modems.

Sixty seven percent (67%) of the members of this classification have televised sessions, which are provided by either a senate staff/studio or public television stations.

The group that the committee has chosen to label "middle-technology" is comprised of a wide range of state systems. Some simply have computers which are not linked in any way, to those that may be able to receive information within the building or a state agency. Of the twelve states placed in this category, nine (75%) are linked to other offices in the building and have direct computer access to bill status and bill index information. Three states: Massachusetts, Oregon and South Dakota do not.

The Massachusetts Senate, comprised of forty senators is located in the bottom forty percent (40%) of the states surveyed in terms of available technology. Within the Senate, technology is very diverse with one office having computers that are linked in no way - relying upon discs to transfer information, to committee offices that have systems capable of retrieving basic legislative information after jumping through many hoops. Bills are entered into three different computers and legislation is often hand-carried from one place to another.